

SHOPPING TROLLEYS

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THIS INVENTION relates to shopping trolleys. The invention also relates to a vehicle, and to a vehicle assembly comprising the shopping trolley and a vehicle.

EP 0286 520 provides a shopping trolley which is foldable and is dimensioned to allow storage of the folded trolley in the boot of a vehicle, but can be erected to serve as a suitably sized shopping trolley. WO 99/06259 provides a transport system which comprises a mobile transport device, such as a shopping trolley, which is carried in a larger vehicle, wherein the vehicle has provisions for carrying the transport device.

The invention provides a shopping trolley which includes:

a holder for holding articles of shopping or for holding a basket, tray or bag containing articles of shopping; and

a wheeled undercarriage connected to the holder, the undercarriage being operable between an erected condition, in which the undercarriage supports the holder at a working height above the ground on wheels, and a collapsed compact condition, for loading of the trolley into a boot or trunk of a passenger sedan.

It will be appreciated that the shopping trolley is intended for use with a vehicle, and that the vehicle and the shopping trolley will be shaped for co-operation with each other, particularly during storage of the shopping trolley in the boot of the car when the trolley is in its collapsed condition. The shopping trolley can thus, instead, be seen primarily as a vehicle accessory.

A feature of the trolley, in its collapsed condition, is that it can fit into a boot or trunk of a passenger sedan of average size, to function as a boot or trunk divider or organiser. The trolley may thus, when it is in its collapsed condition and is supported on a floor of a vehicle boot, have a length dimension of 0,5-0,9 m, preferably 0,6-0,8 m, a height dimension of 0,3-0,6 m, preferably 0,4-0,5 m, and a width dimension of 0,3-0,6 m, preferably 0,4-0,5 m.

The shopping trolley may be supportable on a floor of a vehicle boot, when the undercarriage is in its collapsed condition, such that the holder has an orientation relative to the vertical similar to the orientation of the holder when the undercarriage is in its extended condition and supports the holder on the ground, so that the holder provides

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CLAIMS:

1. A shopping trolley which includes:
a holder for holding articles of shopping; and
a wheeled undercarriage connected to the holder, the undercarriage being operable between an erected condition, in which the undercarriage supports the holder at a working height above the ground on wheels, and a collapsed compact condition, for loading of the trolley into a boot of a passenger sedan,
the undercarriage comprising at least one elongate curved leg which is part-circular in shape, each leg being slidably mounted on an associated frame-member such that each leg is slidably displaceable between an extended position in which the leg projects from its associated frame member for engagement of wheels mounted on that leg with the ground, the leg being arranged more or less end-to-end with the associated frame member, and a retracted position in which the leg is retracted relative to its associated frame member.
2. A shopping trolley as claimed in claim 1, which is supportable on a floor of a vehicle boot, when the undercarriage is in its collapsed condition, such that the holder has an orientation relative to the vertical similar to the orientation of the holder when the undercarriage is in its extended condition and supports the holder on the ground, so that the holder provides a boot organiser.
3. A shopping trolley as claimed in claim 1 or claim 2, in which the spacing of the holder from the ground surface, when the undercarriage is in its erected condition, is such that the holder is accessible to a person of average height in normal stance, the spacing being greater than 0,45 m.
4. A shopping trolley as claimed in claim 3, in which the spacing of the holder from the ground surface, when the undercarriage is in its erected condition, is 0,5 - 0,6 m.
5. A shopping trolley as claimed in any one of the preceding claims, in which the holder defines a storage space which is divided into a number of compartments.

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6. A shopping trolley as claimed in claim 5, which includes a number of durable shopping bags which are receivable in the storage space of the holder, the bags forming a permanent part of the accessory, being removable from the holder and being intended for repeated use.

7. A shopping trolley as claimed in claim 6, in which the bags are of a woven flexible textile material.

8. A shopping trolley as claimed in claim 6 or claim 7, in which at least some of the bags are insulated to provide thermally insulated storage chambers.

9. A shopping trolley as claimed in any one of claims 6 to 8 inclusive, in which at least one of the bags has a closure mechanism for openably closing the bags.

10. A shopping trolley as claimed in any one of the preceding claims, in which the undercarriage has a set of four wheels which are arranged in a rectangular configuration in plan view, when the undercarriage is in its erected condition, each roller being freely swivelable about an associated upright swivel axis.

11. A shopping trolley as claimed in any one of the preceding claims, in which the undercarriage comprises a pair of elongate curved legs which are part-circular in shape, a set of wheels being mounted on the pair of legs.

12. A shopping trolley as claimed in claim 11, in which each leg is telescopically received in the associated frame member, to be telescopically slidable between its extended position and its retracted position, so that, in the retracted position, each leg is located within the associated frame member, each frame member having a part-circular shape corresponding to the shape of the legs, to permit telescopic sliding of the legs in a circumferential direction.

13. A shopping trolley as claimed in claim 12, in which each leg has mounted thereon a displaceable handle such that, when the leg is in its extended position, the associated handle is located adjacent a rear of the trolley, in its fore-and-aft direction, for gripping by a user, each handle being pivotally displaceable relative to the associated frame member about a pivot axis which extends transversely to the fore-and-aft direction of the trolley in its erected condition, so that, when the leg is in its retracted position, the handle is pivotally displaceable about its pivot axis towards the associated frame member

to lie adjacent the frame member.

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14.

A shopping trolley as claimed in any one of claims 11 to 13 inclusive, in which each leg has mounted thereon a pair of wheels spaced along the length of the leg, each wheel being spaced from the associated leg by an elongate foot which is pivotally connected at one end thereof to the leg for pivotal displacement about a pivot axis which extends transversely to the fore-and-aft direction of the shopping trolley, the associated wheel being provided at the opposite end of the foot, each foot being pivotally displaceable between a stowed position in which it lies adjacent the associated leg, and an operative position in which it projects transversely from the associated leg, so that the associated wheel is spaced from said leg by the length of the foot for engagement with the ground.

15.

A shopping trolley as claimed in any one of claims 11 to 14 inclusive, in which each part-circular leg and its associated part-circular frame member, in the erected condition of the undercarriage, lie in a more or less vertical plane and define a gap between their ends at a front of the trolley in the fore-and-aft direction of the shopping trolley, said gap being sufficiently large to straddle a rear portion of an open boot of a passenger sedan when the shopping trolley is wheeled towards the boot of the vehicle, in use, so that part of the legs is receivable in a space between the ground and the rear of the vehicle, the frame members engaging the rear of the vehicle, to rest thereon.

16.

A shopping trolley as claimed in any one of claims 11 to 15 inclusive, which includes an auxiliary holder for holding articles of shopping, the auxiliary holder being removably and replaceably connectable to the legs to extend between the legs when they are in their extended positions, the auxiliary holder additionally serving as a strengthening cross-member between the legs to enhance lateral stability of the undercarriage.

17.

A shopping trolley as claimed in any one of claims 11 to 16 inclusive, in which the pair of frame members are displaceable relative to each other between an operative condition in which the frame members lie in parallel planes which are laterally spaced apart in a direction transverse to the fore-and-aft direction of the shopping trolley a sufficient distance to permit temporary storage of articles of shopping in a space defined between the frame members, and a fully collapsed condition in which the frame members lie more or less flat against each other.

18.

A shopping trolley as claimed in any one of claims 11 to 17 inclusive, which includes a pair of auxiliary wheels which are respectively mounted on the frame

members adjacent ends of the frame members in the fore-and-aft direction of the trolley, such that the auxiliary wheels are engageable with the ground when the extendable legs are in their retracted positions and an end of the trolley opposite the auxiliary wheels is gripped by a user, to permit wheelbarrow-fashion operation of the trolley.

19. A vehicle assembly which includes:

a shopping trolley as claimed in any one of claims 1 to 17 inclusive; and

a vehicle which includes a body defining a boot, the boot having a securing arrangement specifically for securing the shopping trolley in a stable condition in the boot during normal operation of the vehicle, the shopping trolley being supported with its undercarriage in its collapsed condition on a floor of the boot of the vehicle and being secured in a stable condition by the securing arrangement provided by the vehicle.